



# Division of Fisheries & Wildlife

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## STATUS OF PIPING PLOVERS IN MASSACHUSETTS - 1994 SUMMARY

Observers reported a total of 352 breeding pairs of Piping Plovers (Charadrius melodus) at 77 sites in Massachusetts in 1994 (Table 1). Breeding pairs are defined as pairs observed with either a nest or unfledged chicks or that exhibit site tenacity and evidence of pair bonding and territoriality. Overall observer effort in 1994, measured as number of sites surveyed and intensity of census effort at each site, was roughly comparable to previous efforts conducted annually since 1986. At least 9 pairs that established territories or nested unsuccessfully were believed to have moved to new sites and renested. These pairs were included in counts of pairs at both sites where they occurred, but were tallied only once in regional or state totals (Table 1).

The 1994 total of 352 pairs is the highest count of Piping Plovers recorded in Massachusetts since comprehensive statewide surveys began in 1985, and represents an increase of 63 pairs (22%) over the 1993 count of 289 pairs (Table 2). Number of pairs increased in 7 of 9 regions of the state (Table 3).

In addition to estimating total pairs present during the breeding season, cooperators also censused pairs at all occupied sites and 36 historic or potential sites during this year's standardized "index count" period of 28 May to 5 June. The intent of the index count is to minimize double-counting of pairs that move between sites, thereby providing an index to population trends that is more precise than the total count. The 1994 index count was 329 pairs, 93% of the total count of 352 pairs and a 28% increase over the 1993 index count of 258 pairs.

Mean number of pairs per occupied site in 1993 was 4.6 (range = 1 - 21). Maximum numbers of pairs occurred at Crane Beach (21), Sandy Neck (18), South Beach-Chatham (15), and Parker River National Wildlife Refuge (15). Twelve sites had  $\geq 10$  pairs and accounted for 46% of all pairs. Forty-four of 77 sites had  $\leq 3$  pairs and accounted for 22% of all pairs.

Overall mean productivity for Massachusetts in 1993 was 1.80 chicks fledged per pair, based on data from 334 of 352 pairs (95%) at 75 of 77 sites (97%) (Table 2). This represents a 6% decline in productivity from the statewide average of 1.92 chicks fledged per pair in 1993. A chick was considered fledged if it survived  $\geq 25$  days or was observed in flight, whichever occurred first. All regions of the state averaged  $\geq 1.3$  chicks fledged/pair, and only Buzzards Bay, the Elizabeth Islands, and Nantucket failed to fledge an average of  $< 1.6$  chicks/pair (Table 3).

Cooperators reported data on hatching and fledging success for 419 nest attempts by 341 pairs. Hatching success was 0.59 (907 of 1,534 eggs hatched) and fledging success was 0.66 (594 of 907 chicks survived to fledge).

We extend our sincere thanks to all the biologists, beach managers, landowners, and concerned individuals that participated in conservation efforts for Piping Plovers and other coastal birds in Massachusetts in 1994.

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Table 1. Abundance, distribution, and productivity of Piping Plovers in Massachusetts, 1994.

Location	Number of pairs		No. chicks fledged <sup>c</sup>	No. pairs for which fledge data reported	Source <sup>d</sup>
	Index count <sup>a</sup>	Total count <sup>b</sup>			
NORTH SHORE					
2511 Salisbury Beach, Salisbury	0	0	-	-	DR
12 Plum Island-North End, Newburyport	1	1 <sup>e</sup>	nd <sup>f</sup>	0	TS
13 Parker River NWR, Newbury/Rowley	14	15 <sup>eg</sup>	23	15 <sup>eg</sup>	RS,GN
14 Sandy Point St. Res., Ipswich	4	4	9	4	RS,GN
15 Crane Beach, Ipswich	16	21 <sup>g</sup>	43	21 <sup>g</sup>	DR
16 Coffin's Beach, Gloucester	nd	nd	nd	nd	-
2517 Wingaersheek Beach, Gloucester	nd	nd	nd	nd	-
SOUTH SHORE					
2518 Third Cliff, Scituate	2	2	0	2	LB,SH
19 Fourth Cliff, Scituate	0	0	-	-	LB,SH
20 Duxbury Beach, Duxbury/Plymouth	8	8	18	8	HL
21 Plymouth Beach, Plymouth	3	3	8	3	JC,HL
22 Ellisville State Park, Plymouth	1	1	3	1	HW,JW
2523 Scusset Beach, Sagamore	2	2	7	2	HW
UPPER CAPE					
2524 Black Beach/Sippewisset, W. Falmouth	1	1	0	1	KS,SH
25 Woodneck Beach, W. Falmouth	1	1	0	1	KS,SH
26 Washburn Island, Falmouth	3	3	nd	0	FL
27 South Cape Beach, Mashpee	4	4	4	4	FL,JCa,SH,KS
28 Popponesset Beach, Mashpee	3	3	5	3	KS
29 Town Neck Beach, Sandwich	2	2	0	2	HW
30 Springhill Beach, Sandwich	2	2	4	2	HW
31 East Sandwich Beach, Sandwich	1	1	0	1	ES
32 Scorton Creek, Sandwich	4	4	8	4	ES
33 Sandy Neck, Barnstable	17	18	38	18	ES
34 Sampson's Is.-Dead Neck, Barnstable	3	3	5	3	BL,HW
2535 Long Beach, Barnstable	1	1	1	1	JCo

Table 1. Continued.

Location	Number of pairs		No. chicks fledged	No. pairs for which fledge data reported	Source
	Index count	Total count			
2536 Kalmus Park Beach, Hyannis	0	0	0	0	JCo
30 Gray's Beach, Yarmouth	3	4	3	4	JCo, HW
38 Seagull Beach/Radio City, Yarmouth	2 <sup>h</sup>	2 <sup>h</sup>	4	2 <sup>h</sup>	JCo, SH
24 Great Island, Yarmouth	3	4	10	4	JCo
40 West Dennis Beach, Dennis	0	0	-	-	JCo, SH
41 Chapin Beach, Dennis	1	1	0	1	HB, JCo
42 Town Landings, Dennis	0	0	-	-	HB, KD
43 Corporation Beach, Dennis	0	0	-	-	HB, KD
44 Sesuit Beach, Dennis	0	0	-	-	HB, KD
45 Quivett Neck Beach, Dennis	0	0	-	-	HB, KD
46 Wings Island, Brewster	nd	nd	nd	nd	-
47 Robbins Hill Beach, Brewster	0	0	-	-	HB, SH
48 Town Beach, Brewster	0	0	-	-	HB, SH
2549 Ellis Launching Beach, Brewster	0	0	-	-	HB, SH
<b>LOWER CAPE</b>					
2550 Forest Beach, Chatham	0	0	-	-	HB, KD
50 Cockle Cove, Chatham	0	0	-	-	HB, KD
51 Harding Beach, Chatham	2	2	3	2	ZB
52 Harding Beach Point, Chatham	0	0	-	-	ZB, SW
53 North Monomoy Island, Chatham	0	0	-	-	SW
54 South Monomoy Island, Chatham	6	7	11	7	SW
55 South Beach, Chatham	15	15	24	15	ZB
56 Tern Island, Chatham	1	1	2	1	ZB
57 Nauset Beach, Chatham	8	8	1	8	MG
58 Nauset Beach, Orleans	9	10	16	10	MG
59 Nauset Spit (Heights), Orleans	11	13	24	13	MG
60 New Island, Orleans	0	0	-	-	KD
61 Skaket Beach, Orleans	0	0	-	-	HB, SH
2563 Rock Harbor Beach, Orleans	0	0	-	-	HB, SH

Table 1. Continued.

Location	Number of pairs		No. chicks fledged	No. pairs for which fledge data reported	Source
	Index count	Total count			
2564 Plover Island, Orleans/Eastham <sup>j</sup>	13	13	9	8	MG
65 First Encounter Beach, Eastham	0	0	-	-	HB, SH, SM
66 Coast Guard Beach, Eastham	11 <sup>k</sup>	9 <sup>k</sup>	14	9	KJ
67 Marconi Beach, Wellfleet	6 <sup>k</sup>	10 <sup>km</sup>	29	10 <sup>m</sup>	KJ
68 Jeremy Point/Great Island, Wellfleet	6	7	19	7	KJ
69 Pamet Harbor, Truro	0	0	-	-	HB, SH
70 Beach Point, Truro	0	0	-	-	HB, SH
71 Corn Hill Beach, Truro	0	0	-	-	HB, SH
72 Pond Village Beach, Truro	0	0	-	-	HB, SH
73 Pilgrim Beach, Truro	0	0	-	-	HB, SH
74 Ballston Beach/Newcomb Hollow, Truro	3	3 <sup>m</sup>	7	3 <sup>m</sup>	EH
75 Head of the Meadow, Truro	1	1	3	1	EH
76 High Head, Truro	9	9	21	9	EH
77 South Beach, Provincetown/Truro <sup>n</sup>	13	13	34	13	EH
78 Race Point-North Beach, Provincetown	8	10	27	10	EH
2579 Long Pt. (Wood End), Provincetown	8	11	24	11	EH
BUZZARDS BAY					
2580 Stony Point Dike, Wareham	0	0	-	-	ES
81 Long Beach Point, Wareham	nd	nd	nd	nd	-
82 Little Harbor Beach, Wareham	nd	nd	nd	nd	-
83 West Island, Fairhaven	2	2	4	2	MA, JHi
84 Winsegansett Heights, Fairhaven	0	0	-	-	MA, JHi
85 Round Hill Beach, Dartmouth	1	1	0	1	MA
86 Salter's Pond, Dartmouth	0	0	-	-	MA
87 Demarest-Lloyd State Park, Dartmouth	1	2 <sup>o</sup>	5	2 <sup>o</sup>	MA, JHi
88 Little Beach/Barney's Joy, Dartmouth	12	13 <sup>o</sup>	10	13 <sup>o</sup>	MA, JHi
89 Gooseberry Neck, Westport	3	3	3	3	MA, JHi
2590 Horseneck Beach, Westport	4	6 <sup>p</sup>	13	6 <sup>p</sup>	MA, JHi

Table 1. Continued.

Location	Number of pairs		No. chicks fledged	No. pairs for which fledge data reported	Source
	Index count	Total count			
2591 Acôaxet, Westport	0	0	-	-	JHi
92 Cockeast Pond, Westport	0	0	-	-	JHi
93 Richmond Pond, Westport	2	2 <sup>P</sup>	0	2 <sup>P</sup>	JHi
2594 Bay Point, Swansea	0	0	-	-	AW
<b>ELIZABETH ISLANDS</b>					
2595 Naushon Island	1	1	0	1	JHa
96 Pasque Island	5	5	0	2	JHa
97 Nashawena Island	5	5	10	5	DK
2598 Cuttyhunk Island	4	5	2	1	SM, BB, JHi
<b>MARTHA'S VINEYARD</b>					
2599 Harthaven, Oak Bluffs	2	2	3	2	DS, CC
2600 Eel Pond/Little Beach, Edgartown	0	0	-	-	DS, RR
01 Silvia State Beach, Edgartown	1	1	3	1	RC, DS, CC
02 Norton Point, Edgartown	6	7 <sup>q</sup>	17	7 <sup>q</sup>	RC, CC
03 Wasque, Chappaquiddick	1	1	0	1	LJ
04 Cape Pogue W.R., Chappaquiddick <sup>r</sup>	6	6 <sup>q</sup>	7	6 <sup>q</sup>	DK
05 Edgartown Great Pond, Edgartown	2	3	0	3	DS, RR
06 Tisbury Great Pond (Quansoo), Chilmark <sup>s</sup>	4	4	6	4	DS, RR, LJ
07 Black Point Pond, Chilmark	2	2	2	2	DS, RR
08 Squibnocket, Chilmark	0	1 <sup>t</sup>	0	1 <sup>t</sup>	DS, RR
09 Moshaup's Trail Beach, Gay Head	1	1	0	1	DS, RR
2510 Long Beach, Gay Head	2	2	4	2	DS, RR
" Dogfish Bar, Gay Head	5	5	14	5	DS, RR
12 Lobsterville Beach, Gay Head	1	1	3	1	DS, RR
2513 Tashmoo, Tisbury	1	1	3	1	DS, RR
2514 Nomans Land	nd	nd	nd	nd	-

Table 1. Continued.

Location	Number of pairs		No. chicks fledged	No. pairs for which fledge data reported	Source
	Index count	Total count			
NANTUCKET					
15 Great Point	8 <sup>u</sup>	8 <sup>uv</sup>	9	8 <sup>v</sup>	TW
16 The Galls	1 <sup>u</sup>	0	0	0	TW
17 Coskata West Beach <sup>w</sup>	1	1	0	1	TW
18 Coskata-Inner Trail <sup>w</sup>	1	1	0	1	TW
19 Coskata-East Beach <sup>w</sup>	0	1 <sup>v</sup>	0	1 <sup>v</sup>	TW
21 Coskata Inlet/The Haulover <sup>w</sup>	0	0	-	-	TW
22 Quidnet	0	0	-	-	SP
23 Siasconset Beach	0	0	-	-	SP
24 Low Beach	3	3	3	3	SP
25 Tom Nevers Head	0	0	-	-	SP
26 Surfside	0	0	-	-	SP
27 Smith Point	1	2	8	2	SP
28 Eel Point	2	2	4	2	KC
29 Tuckernuck Island	3	3	7	3	TW
30 Muskeget Island	4	4	2	1	TW
TOTALS	329	352	603	334	

<sup>a</sup> Index count = number of territorial pairs counted between 28 May and 5 June 1994, the standard Atlantic coast index count period.

<sup>b</sup> Total count = best estimate of total territorial pairs present during all or a portion of the 1994 breeding season. Pairs that are suspected of nesting at more than 1 site are only tallied once in regional and state total counts and total number of pairs for which fledging data were reported.

<sup>c</sup> Fledging is defined as chicks  $\geq$  25 days of age or observed in flight, whichever occurs first.

- <sup>d</sup> Key to sources: AW = Anthony Waring, BB = Brad Blodget, BL = Brian Long, CC = Catherine Cook-Holmes, DK = Delia Kaye, DR = David Rimmer, DS = Deborah Swanson, EH = Ed Hoopes, ES = Eric Strauss, FL = Francis LeBaron, GN = Glynnis Nakai, HB = Henry Barbour, HL = Heather Leslie, HW = Heidi Wennemer, JC = John Crane, JCa = Jean Cannizzaro, JCo = Joan Coddington, JHi = John Hill, JHa = Jeremy Hatch, JW = Jay Wennemer, KC = Karen Combs-Beattie, KD = Kirsten Dahlen, KJ = Kyle Jones, KS = Kimberly Spectre, LB = Lorraine Burns, LJ = Luanne Johnson, MA = Michelle Anderson, MG = Mark Genaris, RC = Robert Culbert, RR = Ruth Richards, RS = Robert Springfield, SH = Scott Hecker, SM = Scott Melvin, SP = Swede Plaut, SW = Sharon Ware, TS = Tim Simmons, TW = Tina Whitman, ZB = Zach Boyajian.
- <sup>e</sup> We assume the pair that nested at the north end of Plum Island moved south and established a nesting territory at Parker River NWR sometime after June 6. This pair is reported for both sites, but only tallied once in total counts for North Shore and the state and for total pairs for which fledging data were reported.
- <sup>f</sup> nd = no data available.
- <sup>g</sup> One pair was believed to have moved from Parker River NWR and re-nested at Crane Beach; it is reported for both sites, but is only tallied once in North Shore and state totals and total pairs for which fledging data were reported.
- <sup>h</sup> SH observed a pair scraping at Radio City on April 18, and believes they had been present about 2 weeks. They were not seen at Radio City thereafter, and could have been the 2nd pair that subsequently nested on Seagull Beach. SH and JCo suspect that 1 or both members of pair #1 that fledged 2 chicks near the Myhos property on Seagull Beach renested and fledged 2 more chicks on Seagull Beach.
- <sup>i</sup> Formerly South Beach Island; has now reconnected to the mainland near Chatham Light.
- <sup>j</sup> Plover Island was formerly the north end of Nauset Spit; it was created when Nauset Spit breached during winter 1993.
- <sup>k</sup> Two pairs that were present at Coast Guard Beach for only a few days during the index count period could have been 2 of the pairs that arrived at Marconi after the index count.
- <sup>l</sup> Includes LeCount Hollow.
- <sup>m</sup> The pair that nested unsuccessfully at Newcomb Hollow was believed to have subsequently renested



at Marconi. This pair is reported for both sites, but is only tallied once in Lower Cape and state totals and total pairs for which fledging data were reported.

- <sup>n</sup> South Beach-Provincetown/Truro includes all the Atlantic beach of Cape Cod National Seashore from High Head to the beginning of Race Point Beach, including locations referenced in previous years as Mission Bell, Frenchie's, Exit 9, and Armstrong Cut.
- <sup>o</sup> One pair that nested unsuccessfully at Barney's Joy was believed to have renested at Demarest-Lloyd State Park. This pair is reported for both sites, but is only tallied once in total counts for Buzzards Bay and the state and total pairs for which fledging data were reported.
- <sup>p</sup> One pair that nested unsuccessfully on Richmond Pond was believed to have renested at Horseneck Beach. This pair is reported for both sites, but is only tallied once in total counts for Buzzards Bay and the state and total pairs for which fledging data were reported.
- <sup>q</sup> One pair at Cape Pogue was present and scraping for about 2 weeks, during and after the index count. Suspect this pair subsequently moved to Norton Point and nested. This pair is only tallied once in the Martha's Vineyard and state totals and total pairs for which fledging data were reported.
- <sup>r</sup> Cape Pogue Wildlife Refuge includes East Beach to Cape Pogue Elbow on Chappaquiddick Island.
- <sup>s</sup> Includes Long Point Wildlife Refuge and Lewis property.
- <sup>t</sup> We assume the Squibnocket pair renested elsewhere on Martha's Vineyard after losing its nest to washover sometime before May 30. This pair is reported for Squibnocket, but not tallied in Martha's Vineyard or state total; we assume it was counted wherever it relocated, possibly at Moshaup's Trail or as the 2nd pair at Long Beach.
- <sup>u</sup> A pair was present at The Galls May 25-29 only. TW suspected this pair moved to Great Point east of the lagoon, where they were observed with a 1-egg clutch on May 31. This pair is reported in the index count for both Great Point and The Galls, but is tallied only once in index counts for Nantucket and the state. It is reported in the total count only for Great Point, and is tallied only once in the total counts for Nantucket and the state.
- <sup>v</sup> Pair no. 1 that nested unsuccessfully at Great Point was believed to have renested, again unsuccessfully, at the Coskata-East Beach (The Glades) washover. It is reported in total counts for both Great Point and Coskata-East Beach, but is tallied only once in total counts for

Nantucket and the state and for total pairs for which fledge data were reported.

- " Coskata West Beach refers to the beach along the Nantucket Sound side of Coskata, from south end of The Galls south and west to the boundary of Coatue (was referenced as Coskata-North Beach by TW in 1993, and included as part of The Galls by Marcia Litchfield in 1992 and 1991). Coskata-Inner Trail refers to the inland trail running south and west from Coskata toward Coatue. Coskata-East Beach refers to the beach along the eastern (Atlantic) side of Coskata. Coskata Inlet is the inlet from Nantucket Harbor into Coskata Pond.

Table 2. Summary of abundance and productivity of Piping Plovers in Massachusetts, 1986-1994.

Year	Total count <sup>a</sup>	Index count <sup>b</sup>	Mean chicks fledged/pair	No. (% of total) pairs with fledge data
1994	352	329	1.80	334 (95)
1993	289	258	1.92	264 (91)
1992	213	207	2.03	206 (97)
1991	160	148	1.72	156 (98)
1990	140	111	1.38	125 (89)
1989	137	-	1.59	123 (90)
1988	134	-	1.29	114 (85)
1987	126	-	1.07	89 (71)
1986	139	-	-	-
1985	131	-	-	-

<sup>a</sup> Total count = best estimate of total territorial pairs present during all or a portion of the breeding season.

<sup>b</sup> Index count = total territorial pairs counted during 9-day standardized count period (28 May - 5 June 1994).

Table 3. Summary of piping plover abundance (total pairs) and productivity (mean number of chicks fledged per pair) by region of Massachusetts, 1993 and 1994.

Region	Total pairs		Mean chicks fledged/pair	
	1993	1994	1993	1994
North Shore	27	39	2.07	1.92
South Shore	16	16	1.75	2.25
Upper Cape	49	54	1.77	1.61
Lower Cape	115	141	2.05	1.97
Buzzards Bay	25	27	1.90	1.30
Elizabeth Islands	12	16	2.38	1.33
Martha's Vineyard	27	35	1.78	1.77
Nantucket	11	17	1.09	1.41
Tuckernuck, Muskeget Is.	7	7	nd <sup>a</sup>	2.25
Totals	289	352	1.92	1.80

<sup>a</sup> nd = no data available

Table 3. Summary of piping plover abundance (total pairs) and productivity (mean number of chicks fledged per pair) by region of Massachusetts, 1993 and 1994.

Region	Total pairs		Mean chicks fledged/pair	
	1993	1994	1993	1994
North Shore	27	39	2.07	1.92
South Shore	16	16	1.75	2.25
Upper Cape	49	54	1.77	1.61
Lower Cape	115	141	2.05	1.97
Buzzards Bay	25	27	1.90	1.30
Elizabeth Islands	12	16	2.38	1.33
Martha's Vineyard	27	35	1.78	1.77
Nantucket	11	17	1.09	1.41
Tuckernuck, Muskeget Is.	7	7	nd <sup>a</sup>	2.25
Totals	289	352	1.92	1.80

<sup>a</sup> nd = no data available